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Original Article

"Beyond Crop Yields: Holistic Approaches to Improve Farmer Income in India"

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Based on the most recent Agriculture Census of 2022, there are over 148 million farmers in India, of which over 80% are small and marginal farmers. The average land holding size in India is 1.15 hectares, but due to land fragmentation, industrialization, and urbanization, which are forcing farmers to give up farming in favor of alternative, more sustainable forms of subsistence, this number is expected to decline significantly in the years to come. Furthermore, small and marginal farmers bear the brunt of the high risk associated with farming due to factors including climate fluctuation, unpredictability in production and market demand, and restricted access to markets and support services. Therefore, strategies for boosting farmer income as well as those that promote sustainable and ecologically compatible agriculture must be addressed.

Techniques for Doubling Farmer Income

Market Dominance Small-scale farmers lack access to up-to-date market data, which is necessary to understand how the economy is changing. Inadequate infrastructure, finance, communication, and transportation exacerbate market failures. Unfair pricing may deter farmers from raising their output. A comprehensive framework that incorporates marketing systems into agricultural growth at the policy level is necessary to address this. Encouraging sustainable localized marketing has the potential to significantly raise farmer earnings in remote places.

Agriculture's Price Policy

The Indian government establishes minimum support prices, or MSPs, for 24 commodities to shield farmers from abrupt price drops. To double the farmer's revenue, this price policy must be expanded to encompass more agricultural products.

National Agriculture Market (e-NAM)

Currently, APMC-regulated market yards limit the trading of agricultural commodities to local mandis at the first point of sale after harvest, with occasional restrictions extending to Taluka/tahsil or

district levels. When transferring produce within a state, the absence of a single agricultural market even among states results in additional transaction costs. Trading across state and district borders necessitates multiple permissions, which encourages a scattered, costly agriculture industry and obstructs the efficient flow of agricultural goods.



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Amendments to the APMC Act

This rule forbids farmers from selling directly to exporters or processors, which impedes agricultural exports and processing. It restricts the power of state governments to establish markets, discouraging private investment in infrastructure. The state's market fragmentation hinders the free flow of goods, driving up the cost of handling and mandi as well as consumer prices without adequately rewarding producers. To encourage NAM participation and competitive marketplaces, state APMC legislation must be modified.

Contract farming

States must be encouraged to participate in contract farming, in which the buyer can provide the farmer with access to state-of-the-art machinery, premium inputs, extra help, and a set price. It was heavily stressed in the 2003 model APMC Act.

Farmers and Producers Organization

Small or marginal pieces of land are owned by the great majority of Indian farmers, which affects the potential scale economies that are crucial to the selling of agricultural products. Because of increased transportation costs and associated expenses, these smaller sizes are often not practicable. As a result, creating cooperative farmer groups can significantly improve their bargaining power and enable them to demand higher prices for their produce.



Establishment of terminal markets

Terminal markets, which are typically located in urban areas, function as both a meeting spot and a commodity marketplace. In addition to increasing farmer income and promoting market transparency, its goals include shortening supply chains for perishable items, connecting farmers directly to markets, and setting fair prices for farm-grown goods. Farmers can increase their income by obtaining higher prices by offering backward connections.

Post-Harvest Management

India struggles with post-harvest losses of twenty to thirty percent and processes just two to three percent of its agricultural output, despite producing enough food to feed itself. Lower post-harvest losses offer a substantial chance to boost farmer profits.

Direct Marketing

When farm produce is sold directly to customers, it acquires value, eliminating middlemen and boosting farmer revenues. Encourage the replication of successful direct marketing initiatives across the nation with the necessary changes, such as Apni Mandi, Uzhavar Sandai, Rythu Markets, and VFPC (Vegetable and Fruits Promotion Council, Kerala). This will increase the programs' influence.

Agricultural Input

Farmers require high germination rates, disease-free standards, and varietal purity together with improved seed accessibility right now. Effective water management and fertilizer management based on soil tests are essential for sustainable agriculture. Rainfall-prone areas benefit from Participatory Watershed Development Programs. Using the right risk-reduction strategies is essential to the agriculture industry's corporate sustainability as well as the farmers' financial stability.

Climate-smart agriculture (CSA)

CSA supports the efficient transformation and reorientation of agricultural systems to promote development, in addition to guaranteeing food security in a changing environment and a sustainable increase in agricultural productivity and earnings.

Integrated farming system

The IFS strategy stabilizes income through resource management and livelihood diversification. It will also encourage the expansion of family labor employment. It means utilizing the outputs of one enterprise component as inputs for other related firms wherever possible.

Crop insurance

A helpful instrument for protecting farmers from unforeseen natural disasters that can have a detrimental influence on crop yield is crop insurance. Currently covering production losses, post-harvest losses, and localized weather-related disasters, the Pradhan Mantri Fasal Bima Yojana (PMFBY) program is a commendable initiative.

The diversification of agriculture

Small and marginal holdings make up about 80% of all operational holdings in the country. Diversification toward high-value cash crops will help boost farmers' incomes by improving resource usage efficiency.

Increasing crop yields to increase revenue

Farmers' incomes can rise with a sustained increase in agricultural yield. India lags behind other nations in the globe in terms of crop yield; therefore, lifting farmers out of poverty will require an immediate increase in productivity per hectare. Using soil health cards, increased irrigation access, superior cultivars, and the newest technologies will boost productivity and production.

Increase in cropping intensity

It is important to support farmers in expanding their agricultural lands and raising a variety of crops in each cropping season. Farmers should be urged to use more innovative cropping system ideas to optimize farmland and farmer productivity without the risk of crop competition for resources.

Bridging yield gap

Compared to other countries, India has a much larger yield disparity. Extension agencies are required to develop and disseminate a site-specific set of procedures for different crops and ensure that inputs are received on time and in enough quality.

Making use of biotechnology to boost output

Biotechnology has made it possible to include Genetically Modified (GM) traits that have increased yields without the requirement for crop breeding. Insect and herbicide resistance are examples of GM traits that contribute to higher yields by retaining the yield that would otherwise be lost to weeds or insects. Insect-resistant cotton (Bt cotton) has enhanced cotton yield in India by 24%, primarily due to a reduction in pest damage and a 50% increase in cotton profit for smallholders.

Nutrition farming

Nutrition-sensitive agriculture aims to improve food availability, sustainability, and nutritional content that emphasizes the cultivation of high-nutrient crops and biofortified varieties. Nutri farms or gardens have gained traction, offering nations a means to enhance nutritional security. Nutrition

farming addresses essential goals by providing nutrients and generating extra income through crop diversification and cost-effective cultivation.

AGRICULTURAL EXTENSION STRATEGIES:

Using ICT in Agriculture

The use of information and communication technology (ICT) in agriculture directly benefits farmers by providing them with up-to-date information and promoting knowledge exchange among farmers. Farmer incomes could triple as a result of increased ICT use in agriculture.



Public-Private Partnership in Agriculture

India has a wide ratio of 1:5000 (about 60,000 extension staff), while Ethiopia and China have lesser ratios of extension workers to farmers (1:476) and 1:625, respectively. To triple farmers' income in five years, public-private cooperation in agriculture must be encouraged.

Promotion of Farmer's Organizations

Farmer's Organizations stand to gain a great deal from these strategies, including enhanced bargaining power, reduced transaction costs for input purchases and transportation and accelerated processing and sales of agricultural goods. Programs for agricultural and rural development must involve FOs in their creation, management, and planning to boost the revenue of small and marginalized farmers.

Growth of Entrepreneurship

Strong support systems and initiatives to boost farmer capacity are necessary to enable agripreneurs to transition from farming to business. To increase their profitability, farmers must become more aware of non-farm and off-farm revenue-generating activities. Agricultural extension programs should give farmers comprehensive education and training, fostering the technical, management, entrepreneurial, and people skills required to run the agricultural sector profitably.